

# Prediction Formats Study Group

## "Lynx Team"

Commissioned by Data Formats and Procedures Working Group  
at Laser Workshop in Matera, November 2000

### Purpose:

Recommend a single laser ranging prediction format to encompass

- Earth satellites
- Lunar laser retro-reflectors
- Laser transponders on or orbiting other solar system bodies
- Laser transponders in transit

### Motivation:

- Lunar ranging predictions cannot be represented by IRVs
- Laser transponders present additional prediction challenges beyond traditional SLR and Ilr requirements
- Low earth satellites could benefit from more accurate predictions

## Preliminary Design Concepts:

- It appears possible to create a format to handle all targets
- Format to be in the form of tabular or polynomial files
- Contents to include time and geocentric state vector at separations required to achieve optimal precision for particular target

## Challenges:

- Will require new on-site and centralized software and procedures
- Will require some type of compression (ala RINEX) due to larger prediction files
- Need to insure all predictions are on ITRF
- Needs to gracefully handle geostationary satellites.
- Should provide means of creating at least degraded predictions beyond end of prediction set in case of extended network outage

## Current Status:

- Charter and working documents have been submitted to the membership
- Member comments are being collected and analyzed
- A new version of the Charter and working document should be available in a couple of months